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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,882	10/12/2004	Chen-Hsiung Yang	TMIP0001USA	5881
27765	7590	01/30/2008		
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION				
P.O. BOX 506				
MERRIFIELD, VA 22116				
			EXAMINER	
			NGUYEN, HUNG	
			ART UNIT	PAPER NUMBER
			2851	
			NOTIFICATION DATE	DELIVERY MODE
			01/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com
Patent.admin.uspto.Rcv@naipo.com
mis.ap.uspto@naipo.com.tw

Office Action Summary

Application No.

10/711,882

Applicant(s)

YANG, CHEN-HSIUNG

Examiner

Hung Henry V. Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/30/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed November 22, 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: **“the method of carrying a wafer”** (see the amendment to in the original title).

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-4, and 6-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification lacks adequate support for the claimed limitation of “wherein the electrostatic chuck is separated from the conducting layer before carrying the wafer”. In order to support for the mentioned

limitation, applicant refers to section [0018] in the specification, however, the Examiner is unable to find claimed limitation at the given location and throughout of the specification.

4. As to claim 22, the method claim is not supported in the original disclosure (please see section 1 of this Office Action).

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 and 6-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1, 12 and 22 the limitations of “the electrostatic chuck is separated from the conducting layer before carrying the wafer” is vague (see rejection under 35 U.S.C 112, first paragraph, supra). Furthermore, this limitation appears to be a step of a method while claims 1 and claim 12 purport an apparatus. Please clarify.

As to claim 21, the limitation of “non-transparent conducting layer” lacks proper antecedent basis in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. As best the claimed subject matters are understood (see rejections under 35 U.S.C. 112, first and second paragraphs, *supra*). Claims are anticipated by references.

8. Claims 1-3, 6-8, 10-14, 16-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledger et al. (5,515,167) in view of Strasbaugh et al. (US 2003/0134578).

Regarding claims 1, 6, 12, 16 and 22, Ledger et al. discloses a wafer carrier for carrying a wafer and a corresponding method having: "a transparent base (fig. 3, 34; membrane, col. 5, lines 42-44); a conducting layer (32; conducting film) positioned on a bottom surface of the transparent base ; wherein the wafer carrier (32, 34) is attracted by an electrostatic chuck (24) via the conducting layer (col. 5, lines 5-7)." The limitations of "the electrostatic chuck is separated from the conducting layer before carrying the wafer" is not given patentable weight since it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ3d 1647 (1987). Thus, Ledger et al discloses substantially all of the limitations of the instant claims except for "bonding layer positioned on a top surface of the wafer carrier for bonding the wafer and the transparent base together" and (claims 6 and 16) "wherein the bonding layer is selected from the group consisting of double-sided tape, ultra violet tape, thermal sensitive tape, photo resist, and wax." However, having a bonding layer of double-sided tape, ultra violet tape, thermal sensitive tape, photo resist, or wax which bonds the wafer and the transparent layer is known to the art as it is evident by the

teaching of Strasbaugh et al. (see claim 3). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the chuck Ledger et al. by including a tape bonding layer utilized in a manner described above for at least the purpose to provide a secure support.

Regarding claim 2, Ledger et al. further disclose “wherein the transparent base has dimensions similar to that of the wafer (col. 5, lines 49-51).”

Regarding claim 3, Ledger et al. further disclose “wherein the transparent base is a glass wafer (col. 5, lines 42-44).”

Regarding claim 7, Ledger et al. further disclose “wherein the wafer is transferred and undergoes at least a semiconductor process (col. 8, lines 62-65).”

Regarding claims 8 and 17-18, Ledger et al. further discloses a semiconductor process (col. 8, lines 62-65) and an alignment mark system (col. 7, lines 1-4). Ledger et al. does not disclose “wherein the semiconductor process is a double-sided process.”

However, it would be obvious to one ordinary skilled in the art that the invention of Ledger et al. is capable to perform a double-sided semiconductor process. Ledger et al. teaches where the apparatus can repeatedly perform patterning procedures (col. 8, lines 62-65). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to further modify the semiconductor process of Ledger et al. as modified by implementing a double-sided semiconductor process for at least the purpose of reducing cost production.

Regarding claims 10 and 20, Ledger et al. further disclose “wherein the conducting layer is a non-transparent conducting layer (32) having at least an exposed region corresponding to the alignment mark (col. 7, lines 1-4).

Regarding claim 11, Ledger et al. further disclose “wherein the non-transparent conducting layer comprises a plurality of conducting patterns connected with each other (col. 5, lines 32-38).”

Regarding claim 13, Ledger et al. further disclose “wherein the transparent base has dimensions similar to that of the wafer (col. 5, lines 49-51).”

Regarding claim 14, Ledger et al. further disclose “wherein the transparent base is a glass wafer (col. 5, lines 42-44).”

Regarding claim 21, Ledger et al. further disclose “wherein the non-transparent conducting layer comprises a plurality of conducting patterns connected with each other (col. 5, lines 32-38).”

9. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledger et al. in view of Strasbaugh et al., as applied to claims 1 and 12, and in further view of Suzuki et al. (US 2003/0029565). The teachings of Leger et al. and Strasbaugh et al. have been discussed above.

Ledger et al. disclose a transparent base, but does not disclose “wherein the transparent base is a quartz wafer.”

However, having a quartz wafer as a transparent base is known to the art as it is evident by the teaching of Suzuki et al. ([0051], lines 2-3). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the transparent base of Ledger et al. by having the transparent base as a quartz wafer for at least the purpose of having a stronger base.

10. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledger et al. in view of Strasbaugh et al., as applied to claims 1 and 8, and in further view of Bollen et al. (4,766,515). The teachings of Leger et al. and Strasbaugh et al. have been discussed above.

Ledger et al. further disclose a conducting layer, but does not disclose “wherein the conducting layer is a transparent conducting layer.”

However, having a transparent conducting layer is known to the art as it is evident by the teaching of Bollen et al. (col. 3, lines 13-15). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to further modify the conductor layers of Ledger et al. as modified by having them as transparent conducting layers for at least the purpose of reducing the weight composition of the chuck.

11. Claims 1, 3, 6-7, 12, 14, 16, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga (U.S.Pat. 6,166,897).

With respect to claims 1, 3, 6-7, 12, 14, 16, 21-22, Matsunaga discloses a wafer carrier (see figure 1) and corresponding method comprising substantially all of the limitations such as: a glass base (16) (see col.5, line 5); a conducting layer (14) positioned on a bottom surface of the glass base (16), and a bonding layer (18) positioned on a top surface of the wafer carrier for bonding the wafer (W) and the glass base (16) together; and wherein the wafer carrier is attracted by an electrostatic chuck (10) via the conducting layer (14). Matsunaga further teaches that the bonding layer (18) can be removed from the base (1) (see col.4, lines 7-8). Matsunaga teaches the bonding layer being thermosetting adhesives and thermoplastic adhesives. Matsunaga does not specifically disclose “the electrostatic chuck is separated from the conducting layer before carrying the wafer”. It would have been obvious to one having ordinary skill in the art at the

time the invention was made to make the electrostatic chuck separately from the conductive layer for the purpose of easily carrying the wafer to a processing apparatus since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Response to Argument

12. Applicant's arguments filed 11/22/2007 with respect to prior art rejections have been carefully reviewed but have been traversed in view of the rejections as set forth above.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hung Henry V Nguyen
Primary Examiner
Art Unit 2851

hvn
1/21/08